
White Paper

Feasibility and Prudence of SR 509/South Access Road Alternative Alignments Which Impact Des Moines Creek Park

January 2000

CH2MHILL

CH2M HILL, Inc.
PO BOX 91500
Bellevue, WA 98009-2050

Introduction

The intent of this white paper is to:

- Review the impacts of the original SR 509/South Access Road Environmental Impact Statement (EIS) Build alternatives, particularly the impacts of the Section 4(f) avoidance alternative, on the Des Moines Creek Park
- Describe the Build alternatives that were developed as a result of a value engineering (VE) study and their impacts on the park
- Evaluate the "feasibility" and "prudence" of the Build alternatives from a Section 4(f) perspective
- Summarize the discussions with various agencies regarding the feasibility and prudence of the Build alternatives
- Present recommendations on the inclusion of alternatives in the EIS

Impacts of Original Alternatives

Alternative C was one of the original three Build alternatives identified for inclusion in the EIS. In terms of Section 4(f), Alternative C is an "avoidance" alternative in that it would avoid a direct impact to Des Moines Creek Park by skirting around its northeast corner. Figure 1 illustrates the location of Alternative C with respect to the park boundary. While there may be minor indirect impacts—visual and noise—to the park, the potentially impacted area is currently unused and there are no plans for its future use or development.

To date, the following impacts of Alternative C have been identified through the environmental review process:

- The proposed alignment would traverse the Runway Protection Zone (RPZ) for Runway 16L/34R, specifically the northern portion of the RPZ referred to as the Extended Object-Free Area (XOFA). The Federal Aviation Administration (FAA) has indicated that it is most concerned about obstructions that would interfere with the safety of aircraft operations and with the risk to people and property on the ground within the 4,000 feet closest to the end of the runway (where most aircraft incidents occur). This distance encompasses another area of the RPZ, the Object Free Area, and the northern two-thirds of the XOFA. FAA has indicated that a cover would be required over the roadway if it were to traverse the northern portion of the XOFA. The cover would need to be designed with structural integrity to protect people on the ground from a crash landing, thus raising the cost of the project by an estimated \$12 million.
- Even though the roadway cover would be intended to provide safety benefits, tunnels pose their own risks. An airplane crash near the entrance could trap or harm motorists inside the tunnel; the risk of injuries or fatalities could also increase as a result of a car fire in the tunnel.

- The alignment would cross through the proposed Des Moines Creek Basin Plan regional detention facilities, reducing the envisioned stormwater storage capacity by approximately 50 acre-feet (roughly one-third of the proposed increased capacity of Regional Pond #1/Northwest Ponds).
- Approximately 9 acres of a Class 1 wetland and its associated buffer (roughly 39 percent of the entire wetland) would be filled.
- Between 371 and 470 residential units would be displaced (31 to 45 percent of the total would be homes in the large mobile home parks south of South 200th Street and east of the park).

Neither of the other two original EIS Build alternatives (B or D) is an avoidance alternative. Alternative B would cross through the park, albeit it at its narrowest point, require the acquisition of approximately 0.5 acres of parkland, and essentially divide the park into two sections. Figure 2 illustrates the specific area of park impact. The enjoyment of the trail below the roadway bridges may be diminished by the visual intrusion of the bridges, the loss of the trees during construction of the bridges, additional shading created by the bridge structures, and the resulting traffic noise. Like Alternative B, Alternative D would bridge the Des Moines Creek Trail, resulting in proximity impacts similar to those described above (see Figure 3).

Value Engineering Study Recommendation

In February 1999, the Washington State Department of Transportation (WSDOT) assembled a VE team to evaluate the three original EIS Build alternatives. The VE team concluded that many of the adverse impacts of the EIS alternatives, and particularly Alternative C (the Section 4(f) avoidance alternative), were a direct result of a specific design constraint that had shaped the development of the EIS alternatives, namely the avoidance of Des Moines Creek Park. After extensive discussions among the VE team members, it was recommended that that particular constraint may be unreasonable considering the complexity of the project area and that new options to Alternative C developed without that constraint should be considered.

Several new options were developed that, even though they impact the park to varying degrees, avoid or minimize other undesirable adverse impacts of Alternative C. A previous white paper entitled *Screening of Value Engineering Study Alignment Recommendations*, dated June 9, 1999, outlines in detail the various new options developed and evaluated. As a result of a two-level screening process and a structured decision-making process in which the Steering Committee participated over a period of several months, two options to Alternative C were eventually identified and recommended to be included in the EIS, along with Alternative C (and B and D).

Value Engineering Study Alternatives

The two new VE Study-generated options to Alternative C have been designated Alternatives C2 and C3; Alternative C has been redesignated Alternative C1. Alternative C2 would divert from the existing SR 509 right-of-way farther south than would

Alternative C1, thus avoiding any impact to the regional stormwater detention facilities or Class 1 wetland and precluding the need for a costly tunnel in the XOFA. (The roadway would be located in the southern one-third of the XOFA where the FAA has expressed a willingness to reconsider the requirement of a cover.) The proposed Alternative C2 alignment would cross through the northeast corner of the Des Moines Creek Park, requiring the acquisition of approximately 8 acres, or roughly 8.5 percent of the entire park (This "take" could be reduced to roughly 6.6 acres if the southbound frontage road from South 200th Street to 24th Avenue South were not included in the final design.) Figure 4 shows the area of impact within the park. In addition to the required acquisition of parkland, Alternative C2 would displace the Des Moines Creek trailhead located immediately south of South 200th Street and the associated small parking area. The rest of the impacted parkland is currently unused and there are no plans for future development.

Alternative C3 would follow a similar alignment as Alternative C2, thus avoiding impacts to the regional detention facilities and Class 1 wetland and precluding the need for a tunnel in the XOFA. Again, the northeast corner of the park would be "taken"; approximately 6.6 acres would be acquired (roughly 7 percent of the entire park) and the trailhead/associated parking area would be displaced. Figure 5 illustrates the area of impact within the park. Unlike Alternative C2, Alternative C3 would continue on a more southerly alignment between the mobile home parks and Des Moines Creek Park. As a result, the number of residential displacements (primarily mobile homes) would be substantially reduced.

Test of Feasibility and Prudence

From a Section 4(f) perspective, an alternative that avoids impacts to a Section 4(f) resource, such as Des Moines Creek Park, must be selected if it is determined to be "feasible" and "prudent." A "feasible" alternative is one that can be built, considering natural, engineering, legal, and other constraints. A determination of prudence requires weighing numerous factors, such as community disruption, displacements, safety, and cost and a conclusion that the social, economic, environmental and/or cost impacts are of an extraordinary magnitude.

Clearly Alternative C1 is a feasible avoidance alternative. As previously noted, however, the impacts of Alternative C1 would include:

- Encroaching into the northern portion of the XOFA, thus requiring a cover over the roadway, creating new risks for motorists who could be trapped inside the tunnel if an airplane crashed near the entrance or a car fire occurred in the tunnel, and raising the cost of the project by \$12 million (from \$445 to \$458 million).
- Crossing the proposed Des Moines Creek Basin Plan regional detention facilities and reducing the stormwater storage capacity by roughly 50 acre-feet.
- Filling approximately 9 acres of Class 1 wetlands.
- Displacing 371 to 470 mobile homes and single- and multiple-family units.

WSDOT's initial opinion was that Alternative C1 would not be a prudent alternative because of the combination of the safety risks associated with the tunnel through the XOFA,

the increased costs of the project associated with the construction of the tunnel, the substantial impacts to the regional stormwater detention facilities and to the highest category of wetlands, and the displacement of a large number of residents. WSDOT was also of the opinion that despite impacts to Des Moines Creek Park resulting from Alternatives C2 and C3, both of these alternatives were prudent because they would avoid or minimize the extraordinary and imprudent impacts caused by Alternative C1.

It should also be noted that, based on an extensive analysis of avoidance alternatives as part of the ongoing Section 4(f) study, WSDOT has conclusively determined there are no other feasible and/or prudent alternatives that avoid impacts to the Des Moines Creek Park.

Meetings with Agencies of Jurisdiction

As part of the determination of whether Alternatives C1, C2, and C3 are feasible and/or prudent alternatives, WSDOT solicited the input of the parks directors and other staff of the two communities that own, operate, and maintain Des Moines Creek Park—the cities of SeaTac and Des Moines. A meeting of these officials was held on July 19, 1999.

(Representatives of the two cities, the Port of Seattle, WSDOT, and the Federal Highway Administration [FHWA] were present.) The consensus of the group was that Alternatives C2 and C3 appeared feasible and prudent and should be included in the EIS, along the Alternatives B, C1, and D. The primary issue of discussion related to appropriate mitigation for the impact to the park. The SeaTac Parks Director argued that because the envisioned park impacts of Alternatives C2 and C3 would occur within the SeaTac-owned portion of the park, any mitigation proposed should also be located in SeaTac. SeaTac proposed that acceptable mitigation for the park "take" would be continuation of the Des Moines Creek Trail north of its current terminus at South 200th Street along the SR 509 alignment to an eventual connection to a proposed trail on the west side of the airport (with linkages to regional trail facilities in the future). WSDOT expressed a willingness to work with the City to accommodate this trail extension within the design of the SR 509 extension. The SeaTac Parks Director also noted that because the park was acquired, in part, through the use of "Forward Thrust" funds, WSDOT would need to identify replacement land of reasonably equivalent recreational utility per the requirements of Section 6(f) of the U.S. Land and Water Conservation Act. It was suggested that land within the adjacent SR 509 right-of-way could possibly be used for replacement property.

WSDOT also conferred with FHWA regarding the issue of feasible and/or prudent alternatives at a meeting on August 26, 1999. FHWA concurred with WSDOT's initial opinion that Alternative C1 would not be a prudent alternative, even though it is a Section 4(f) avoidance alternative. FHWA also concurred that Alternatives C2 and C3, despite their impacts to Des Moines Creek Park, were feasible and prudent alternatives that should be included in the EIS.

Conclusions and Recommendations

The conclusions of the analysis presented in this white paper are that:

- Alternative C1 is the only Section 4(f) "avoidance" alternative still under consideration. Neither the other original EIS Build alternatives (B and D) nor the new VE Study alternatives (C2 and C3) would avoid impacts to Des Moines Creek Park.
- While it is an avoidance alternative, Alternative C1 is not considered "prudent" from a Section 4(f) perspective because of the extraordinary magnitude of the social, economic, environmental, and cost impacts it would create.
- Based on an extensive analysis of avoidance alternatives as part of the ongoing Section 4(f) study, there are no other feasible and/or prudent avoidance alternatives.
- Despite these impacts to Des Moines Creek Park resulting from Alternatives C2 and C3, both alternatives should be considered prudent because they would avoid or minimize the extraordinary and imprudent impacts caused by Alternative C1.

Based on these conclusions, and input from FHWA and local parks directors, WSDOT recommends that Alternatives C2 and C3 be further analyzed in the EIS. In addition, WSDOT recommends that no other avoidance alternatives, other than Alternative C1, be included in the EIS.

FIGURE 1

ALTERNATIVE C (C1)

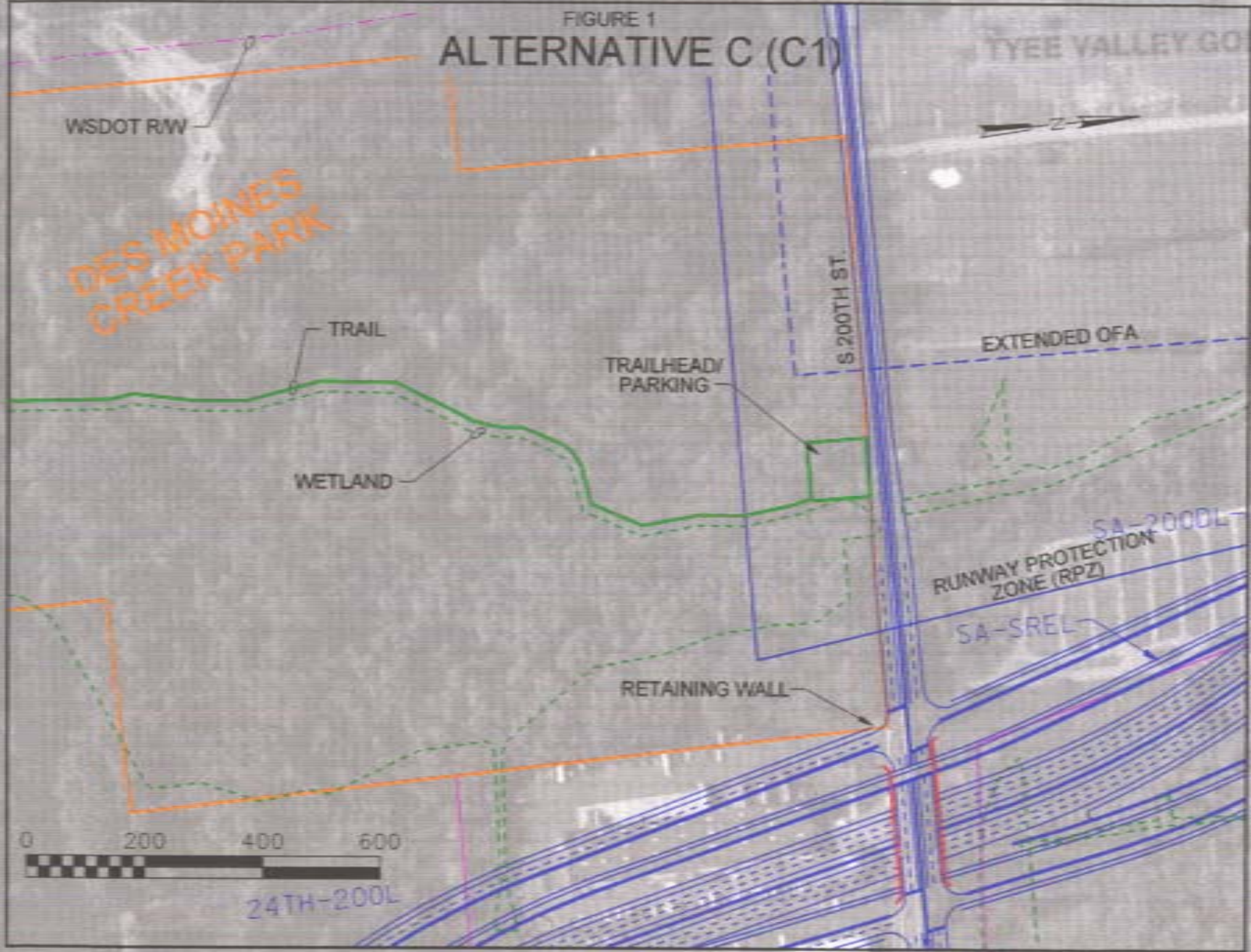


FIGURE 3
ALTERNATIVE D

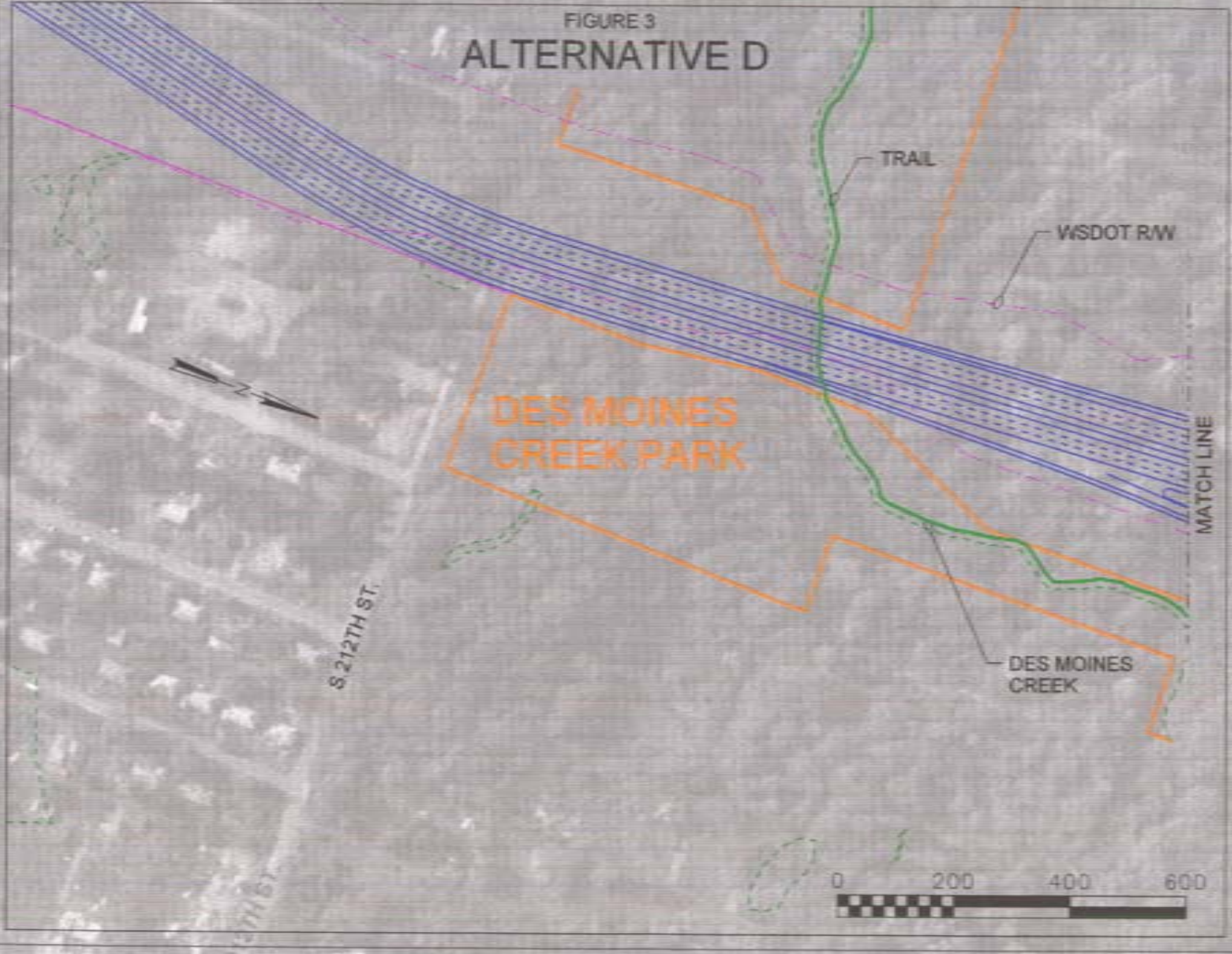


FIGURE 4
ALTERNATIVE C2

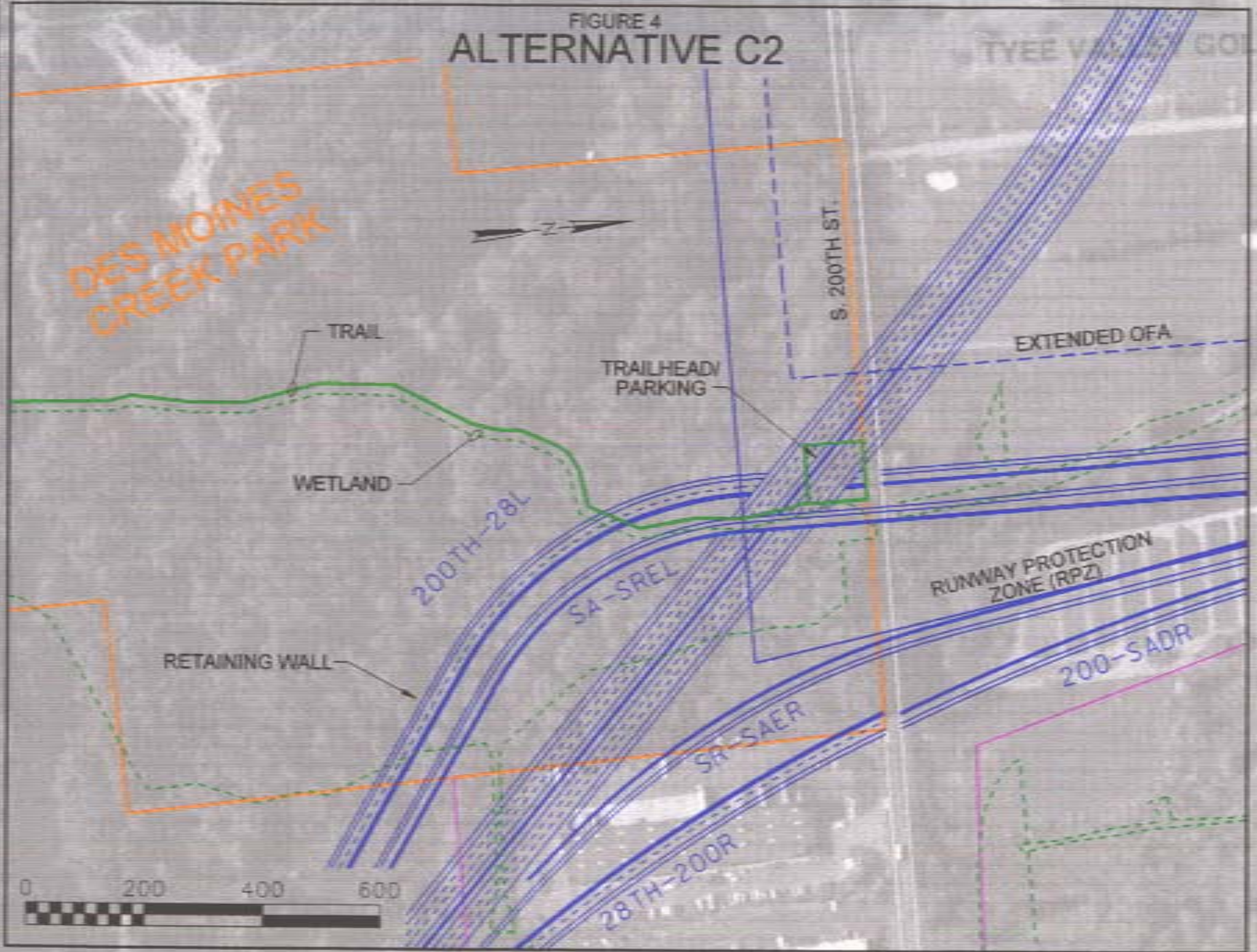


FIGURE 5
ALTERNATIVE C3

